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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/084,019	02/25/2002	Edward G. Tiedemann JR.	010475	8463
23696	7590	11/29/2006		
QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121				
			EXAMINER HALIYUR, VENKATESH N	
			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 11/29/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.		Applicant(s)	
	10/084,019		TIEDEMANN ET AL.	
	Examiner		Art Unit	
	Venkatesh Haliyur		2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☒ Claim(s) 5 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The amendment filed on 11/08/2006 has been fully considered. However, upon further consideration, a new ground(s) of rejection is made in view of Ponnekanti.

Rejections follow.

2. Claims 1 – 19 are pending in the application.

Claim Objections

3. Claim 5 is objected to because of the following informalities:

Claim 5 depends on itself as it recites as "The method of claim 5, further comprising....". Appropriate correction is required.

Claim Rejections – 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States

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only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-19 are rejected under 35 U.S.C. 102(e) as anticipated by Ponnekanti [US Pub: 2002/0150065].

Regarding claim 1, Ponnekanti in the invention of "Communication Systems" disclosed a method for wireless communication system comprising, a quality measurement unit (**items 262, 264 of Fig 11, para 0216-0218**) for iteratively measuring link quality of a communication link (**average of measurements taken over several measurement periods, para 00218,0232-0233**), a quality message processing unit (**item 266 of Fig 11, para 0219**) for generating a quality message (**feedback signal**) and differential indicators (**beam quality indicators, items 262, 264 of Fig 11, para 0219**) based on the measured link quality and for generating a parity check (**BER, para 0218**) corresponding to the quality message, and a differential analyzer (**path diversity controller, item 240, of Fig 10**) for determining changes in the measured link quality (**para 0214-0215**) using the quality message (**feedback signal**) and differential indicators (**FBI bits, para 0220-0221**) [Figs 10-11, para 0021].

Regarding claims 2,6, Ponnekanti disclosed that the link quality is measured as carrier to interference (**SINR, signal to noise interference**) of a received signal and each quality message includes carrier to interference information of a received signal at a receiver (**item 256 of Fig 11, para 0218-0219**).

Regarding claim 3, Ponnekanti disclosed that the quality measurement unit (**items 262,264 of Fig 11, para 0216**) generates a quality metric (**any suitable**

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measure of quality like BER, RSS, FER, SINR, SIR. para 0218), and wherein the remote station (**base station**) applies a sector cover to the quality metric (**para 0139-0141**).

Regarding claims 4,5, Ponnekanti disclosed that the wireless communication system comprises generating quality messages (**feedback signal**) and differential indicators at a first frequency (**each channel specified by its frequency, para 0148**), the quality messages and differential indicators providing information on the quality of a communication link (**transmission path**), and generating a parity check (**BER**) for each of the quality messages (**para 0216-0218**) and generating differential indicators at a second frequency (**para 0148**), the differential indicators indicating changes in the quality (**bit indicating beam fading, FBI bits in one time slot, para 0220-0221**) of the communication link, wherein the second frequency is greater than the first frequency (**obvious feature of CDMA, para 0003-0004**) [**Figs 10-11, para 0220-0224**].

Regarding claim 7, Ponnekanti disclosed a feedback indicator bit (**FBI bit**) length is one or more bits in the communication system [**para 0150**].

Regarding claim 8-11, Ponnekanti disclosed that the wireless communication system comprises estimating a channel condition over a first time window (**para 0216-0221, Fig 6**), comparing the estimated channel condition to a first threshold value, determining a transmission rate for transmission of quality messages and differential indicators based on the comparison (**para 0227**), transmitting quality messages (**feedback signal**) at the transmission rate and transmitting differential indicators independently of quality messages (**para 0039-0044**) and the first time window is

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dynamically adjusted based on operation of the system (**para 0016-0017**) and calculating an average channel condition and calculating variance of the channel condition (**para 0218**) [**Figs 10-11, para 0021-0047, para 0216-0233**].

Regarding claim 12, Ponnekanti disclosed a base station comprising, receive circuitry operative to receive feedback signals (**para 0077-0082**) including a quality message with a parity check (**BER, para 0218**), and differential indicators (**items 262, 264 of Fig 11, para 0219**), the quality message periodically providing a quality metric of a forward link, wherein the indicators track the quality metric between successive quality messages (**FBI feedback signals, para 0158, 0218-0219**), a memory storage unit operative to store a quality message received on the feedback signal (**para 0118**), and a differential analyzer (**path diversity controller, item 240, of Fig 10**) to update the quality message stored in the memory storage unit in response to the differential indicators and the parity check (**para 0227-0228**) [**Figs 10-12, para 0222-0229**].

Regarding claims 13-14, Ponnekanti disclosed that the wireless communication system comprises processing unit, operative for executing computer-readable instructions, and a memory storage unit adapted to store a plurality of computer-readable instructions for (**para 0118**), generating quality messages (**feedback signal**) and differential indicators at a first frequency (**beam quality indicators, items 262, 264 of Fig 11, para 0148, 216-219**), the quality messages providing information on the quality of a communication link (**transmission path**) wherein the differential indicators track a quality metric between successive quality messages (**average of measurements taken over several measurement periods, para 00218, 0232-0233**),

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and generating a parity check (**BER**) for each of the quality messages and further disclosed a method for computer-readable instructions are further adapted for generating differential indicators at a second frequency, the differential indicators indicating changes in the quality (**bit indicating beam fading, FBI bits in one time slot, para 0220-0221**) of the communication link, wherein the second frequency is greater than the first frequency (**obvious feature of CDMA, para 0003-0004**) [Figs 10-11].

Regarding claim 15-17, Ponnekanti disclosed that the wireless communication system comprising processing unit, operative for executing computer-readable instructions, and a memory storage unit adapted to store a plurality of computer-readable instructions (**para 0118**) for, estimating a channel condition over a first time window (**para 0216-0221, Fig 6**) and determining average channel condition among plurality of carriers (**average of measurements taken over several measurement periods, para 00218, 0232-0233**), comparing the estimated channel condition to a first threshold value, determining a transmission rate for transmission of quality messages and differential indicators based on the comparison (**para 0227**), transmitting quality messages at the transmission rate and transmitting differential indicators independently of quality messages (**para 0039-0044**) and assigning a weight (**weight setter, item 242 of Fig 10, para 0214-0215**) to each of the plurality of carriers (**beams**), wherein the average channel condition is a weighted average (**para 0045**) [Figs 10-11, para 0021-0047, para 0216-0233].

Regarding claim 18-19, Ponnekanti disclosed that the wireless communication system comprises processing unit, operative for executing computer-readable instructions, and a memory storage unit adapted to store a plurality of computer readable instructions for **(para 0118)**, determining best channel condition associated with a first frequency **(para 0148)**, and generating a quality message, the quality message including a quality indicator **(para 216-219)** and a frequency indicator identifying the first frequency; and generating differential indicators **(FBI, Fig 3)** separately from the quality message and the frequency indicator is a pointer to select the first frequency from a plurality of predetermined frequencies **(para 0003-0004,0148)** **[Figs 10-11]**.

Response to Arguments

6. Applicant's arguments, see remarks, filed on 11/08/2006, with respect to the rejection(s) of claim(s) 1-11,15-19 under 35 U.S.C 102(e) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Ponnekanti reference.

Conclusion

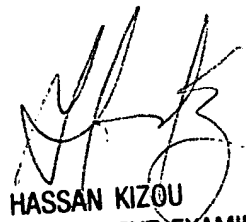
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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Venkatesh Haliyur whose telephone number is 571-272-8616. The examiner can normally be reached on Monday thru Friday 8:30AM to 4:30PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on 571-272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

8. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patent Examiner
Venkatesh Haliyur

vh
11/22/06


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